



2021-22 CTE Programs of Study

Tennessee's career and technical education (CTE) programs of study are meant to provide a relevant framework of industry-aligned, rigorous courses that progress a student in knowledge and skills year after year. They provide invaluable opportunities for students to experience a subject that they are passionate about and explore interests that lead to postsecondary learning and future career paths. These sequenced courses also reflect and support the three-credit elective focus requirement for graduation. Level 1 courses are encouraged to be taken by students in ninth grade; however, districts may make scheduling decisions that work best for their communities and students.

Early postsecondary opportunities (EPSOs), such as dual enrollment, dual credit courses, and college level examination program exams (CLEP) are also valuable opportunities for all students and should be provided within the program of study. The **dual enrollment course codes** may substitute for the Level 3 or 4 course offerings in any aligned career cluster's programs of study where those course codes represent postsecondary courses. Each program of study has four dual enrollment course codes.

Career Exploration (C25X00) is available to orient eighth and ninth-grade students to high school, postsecondary, and career options and develop employability skills. This course can serve as a prerequisite for any CTE course and program of study; however, it is not a required part of any program of study and should not be counted toward CTE concentrator status.

Work-Based Learning: Career Practicum (C25H16) is available to be a substitute for any level 4 course offering. However, this course will not count toward concentrator status but will count toward completer status.

Industry Credentials have been removed from this document. To review promoted industry credentials by programs of study, visit <https://www.tn.gov/education/career-and-technical-education/student-industry-certification.html>

For additional information about courses or programs of study, please reach out to CTE.Standards@tn.gov or visit our webpage at <https://www.tn.gov/education/career-and-technical-education.html>.

Advanced Manufacturing

Program of Study	Level 1	Level 2	Level 3	Level 4
Industrial Maintenance Technology	Principles of Manufacturing (C13H05)	Introduction to Industrial Maintenance (C13H28)	Advanced Industrial Maintenance (C13H29) -or- Dual Enrollment Industrial Maintenance Technology I (C13H30) -or- Dual Enrollment Industrial Maintenance Technology II (C13H31)	Manufacturing Practicum (C13H08) -or- Dual Enrollment Industrial Maintenance Technology III (C13H32) -or- Dual Enrollment Industrial Maintenance Technology IV (C13H33)
Machining Technology	Principles of Manufacturing (C13H05)	Principles of Machining I (C13H09)	Principles of Machining II (C13H06) -or- Dual Enrollment Machining Technology I (C13H01) -or- Dual Enrollment Machining Technology II (C13H20)	Manufacturing Practicum (C13H08) -or- Dual Enrollment Machining Technology III (C13H34) -or- Dual Enrollment Machining Technology IV (C13H35)
Mechatronics	Principles of Manufacturing (C13H05)	Digital Electronics (C13H07) -or- Robotics & Automated Systems (C13H15) -or- Project Lead the Way (PLTW) Computer Integrated Manufacturing (C21H25)	Mechatronics I ¹ (C13H16) -or- Dual Enrollment Mechatronics I (C13H04) -or- Dual Enrollment Mechatronics II (C13H21)	Mechatronics II ¹ (C13H17) -or- Manufacturing Practicum (C13H08) -or- Dual Enrollment Mechatronics III (C13H36) -or- Dual Enrollment Mechatronics IV (C13H37)
Welding	Principles of Manufacturing (C13H05)	Welding I (C13H12)	Welding II ² (C13H10) -or- Dual Enrollment Welding I (C13H03) -or- Dual Enrollment Welding II (C13H18)	Manufacturing Practicum (C13H08) -or- Dual Enrollment Welding III (C13H38) -or- Dual Enrollment Welding IV (C13H39)

¹ Local dual credit and/or dual enrollment opportunities exist for this course.

² May be taught for 1 or 2 credits.

Available courses for elective credit in this cluster:

- ***Work-Based Learning: Career Practicum*** (C25H16) course may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.

Agriculture, Food, & Natural Resources

Program of Study	Level 1	Level 2	Level 3	Level 4
Agribusiness	Agriscience ¹ (C18H19)	Principles of Farm and Agribusiness Management ³ (C18H41)	Organizational Leadership and Communications (C18H18) -or- Dual Enrollment Agribusiness I (C18H03) -or- Dual Enrollment Agribusiness II (C18H32)	Agricultural Business and Finance ^{2,4} (C18H11) -or- Statewide Dual Credit Intro to Agribusiness (C18H10) -or- Dual Enrollment Agribusiness III (C18H43) -or- Dual Enrollment Agribusiness IV (C18H44)
	Supervised Agricultural Experience (C18H23)			
Agricultural Engineering, Industrial, and Mechanical Systems	Agriscience ¹ (C18H19)	Principles of Agricultural Mechanics (C18H12)	Agricultural Power and Equipment (C18H13) -or- Dual Enrollment Agricultural Engineering, Industrial, and Mechanical Systems I (C18H45) -or- Dual Enrollment Agricultural Engineering, Industrial, and Mechanical Systems II (C18H46)	Agricultural Fabrication and Biosystems Engineering ³ (C18H42) -or- Unmanned Aircraft Systems in Agriculture (C18H40) -or- Dual Enrollment Agricultural Engineering, Industrial, and Mechanical Systems III (C18H47) -or- Dual Enrollment Agricultural Engineering, Industrial, and Mechanical Systems IV (C18H48)
	Supervised Agricultural Experience (C18H23)			

Environmental and Natural Resource Management	Agriscience ¹ (C18H19)	Applied Environmental Science ¹ (C18H25) -or- Cambridge IGCSE Environmental Management (C18H07)	Plant and Soil Science ¹ (C18H15) -or- Dual Enrollment Environmental & Natural Resources Management I (C18H06) -or- Dual Enrollment Environmental & Natural Resources Management II (C18H36) -or- IB Environmental Systems and Societies I (SL) (G03H36)	Natural Resources Management ¹ (C18H28) -or- Unmanned Aircraft Systems in Agriculture (C18H40) -or- AP Environmental Science (G03H25) -or- Dual Enrollment Environmental & Natural Resources Management III (C18H49) -or- Dual Enrollment Environmental & Natural Resources Management IV (C18H50) -or- IB Environmental Systems and Societies II (SL) (G03H34)
	Supervised Agricultural Experience (C18H23)			
Food Science	Agriscience ¹ (C18H19)	Principles of Food Production (C18H29)	Food Science and Safety ¹ (C18H26) -or- Dual Enrollment Food Science I (C18H04) -or- Dual Enrollment Food Science II (C18H37)	Advanced Food Science ¹ (C18H24) -or- Dual Enrollment Food Science III (C18H51) -or- Dual Enrollment Food Science IV (C18H52)
	Industry Certification: OSHA - 10		Industry Certification for C18H26: OSHA 30 General Industry	Industry Certification for C18H24: OSHA 30 General Industry
Supervised Agricultural Experience (C18H23)				

Horticulture Science	Agriscience ¹ (C18H19)	Principles of Plant Science and Hydroculture (C18H30)	Greenhouse Management (C18H17) -or- Statewide Dual Credit Introduction to Plant Science ¹ (C18H09) -or- Dual Enrollment Horticulture Science I (C18H05) -or- Dual Enrollment Horticulture Science II (C18H33)	Landscaping and Turf Science ⁵ (C18H16) -or- Unmanned Aircraft Systems in Agriculture (C18H40) -or- Dual Enrollment Horticulture Science III (C18H53) -or- Dual Enrollment Horticulture Science IV (C18H54)
	Supervised Agricultural Experience (C18H23)			
Veterinary and Animal Science	Agriscience ¹ (C18H19)	Small Animal Science (C18H20)	Large Animal Science (C18H27) -or- Dual Enrollment Veterinary & Animal Science I (C18H01) -or- Dual Enrollment Veterinary & Animal Science II (C18H34)	Veterinary Science ¹ (C18H21) -or- Unmanned Aircraft Systems in Agriculture (C18H40) -or- Dual Enrollment Veterinary & Animal Science III (C18H55) -or- Dual Enrollment Veterinary & Animal Science IV (C18H56)
	Supervised Agricultural Experience (C18H23)			

¹ Satisfies one lab science credit required for graduation.

² Satisfies ½ credit of Personal Finance required for graduation.

³ Satisfies the fourth math credit required for graduation.

⁴ Satisfies the one economics credit required for graduation.

⁵ Satisfies the one fine arts credit required for graduation.

Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) course may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.
- **Introduction to Geographic Information Systems** (C18H39) is a supplemental course that can be offered in addition to courses within the Agricultural Engineering and Applied Technologies program of study but does not count toward concentrator status.

Architecture & Construction

Program of Study	Level 1	Level 2	Level 3	Level 4
Architectural & Engineering Design	Architectural & Engineering Design I (C17H13)	Architectural & Engineering Design II (C17H14)	Architectural & Engineering Design III (C17H10) -or- Dual Enrollment Architectural & Engineering Design I (C17H04) -or- Dual Enrollment Architectural & Engineering Design II (C17H28)	Engineering Practicum (C21H14) -and/or- AP Calculus (G02H24 or G02H25) -and/or- AP Physics (G03H27, G03H28, G03H24, or G03H29) -or- Dual Enrollment Architectural & Engineering Design III (C17H35) -or- Dual Enrollment Architectural & Engineering Design IV (C17H36) -or- IB Physics II (SL) (G03H82)
Interior Design	Foundations of Interior Design (C17H12)	Residential Interior Design (C17H11)	Commercial Interior Design (C17H20) -or- Dual Enrollment Interior Design I (C17H05) -or- Dual Enrollment Interior Design II (C17H29)	Advanced Interior Design (C17H19) -or- Dual Enrollment Interior Design III (C17H37) -or- Dual Enrollment Interior Design IV (C17H38)
Mechanical, Electrical, & Plumbing (MEP) Systems	Fundamentals of Construction (C17H15)	MEP Systems (C17H23)	HVAC (C17H17) -and/or- Electrical Systems (C17H16) -and/or- Plumbing Systems (C17H18) -or- Dual Enrollment Mechanical, Electrical, & Plumbing Systems I (C17H03) -or- Dual Enrollment Mechanical, Electrical, & Plumbing Systems II (C17H30)	Construction Practicum (C17H22) -or- Dual Enrollment Mechanical, Electrical, & Plumbing Systems III (C17H39) -or- Dual Enrollment Mechanical, Electrical, & Plumbing Systems IV (C17H40)

Residential & Commercial Construction	Fundamentals of Construction (C17H15)	Residential & Commercial Construction I (C17H24)	Residential & Commercial Construction II (C17H25) -or- Dual Enrollment Residential & Commercial Construction I (C17H01) -or- Dual Enrollment Residential & Commercial Construction II (C17H31)	Construction Practicum (C17H22) -or- Dual Enrollment Residential & Commercial Construction III (C17H41) -or- Dual Enrollment Residential & Commercial Construction IV (C17H42)
Structural Systems	Fundamentals of Construction (C17H15)	Structural Systems I (C17H26)	Structural Systems II ¹ (C17H27) -or- Dual Enrollment Structural Systems I (C17H02) -or- Dual Enrollment Structural Systems II (C17H32)	Construction Practicum (C17H22) -or- Dual Enrollment Structural Systems III (C17H43) -or- Dual Enrollment Structural Systems IV (C17H44)

Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.
- **Introduction to Geographic Information Systems** (C18H39) is a supplemental course that can be offered in addition to courses within the Architectural and Engineering Design program of study but does not count toward concentrator status.
- **Welding I** (C13H12) is a supplemental course that can be offered in addition to courses within the MEP, Residential & Commercial Construction, and Structural Systems programs of study but does not count toward concentrator status.

Arts, Audio/Visual Technology, & Communications

Program of Study	Level 1	Level 2	Level 3	Level 4
Audio/Visual Production	A/V Production I (C11H01)	A/V Production II (C11H02)	A/V Production III (C11H03) -or- Dual Enrollment Audio/Visual Production I (C11H00) -or- Dual Enrollment Audio/Visual Production II (C11H15)	Applied Arts Practicum (C11H07) -and/or- AP English Language and Composition (G01H17) -or- Dual Enrollment Audio/Visual Production III (C11H18) -or- Dual Enrollment Audio/Visual Production IV (C11H19)
Digital Arts & Design	Digital Arts & Design I (C11H06)	Digital Arts & Design II (C11H05)	Digital Arts & Design III (C11H16) -or- Dual Enrollment Arts & Design I (C11H08) -or- Dual Enrollment Arts & Design II (C11H09)	Applied Arts Practicum (C11H07) -and/or- AP Studio Art: 2-D Design (G05H30) -or- Dual Enrollment Arts & Design III (C11H20) -or- Dual Enrollment Arts & Design IV (C11H21)
Fashion Design	Visual Art I (G05H08)	Foundations of Fashion Design (C11H17)	Fashion Design (C11H10) -or- Dual Enrollment Fashion Design I (C11H13) -or- Dual Enrollment Fashion Design II (C11H14) -or- Cambridge International AS Level <u>Art & Design</u> (C11H12)	Advanced Fashion Design (C11H11) -or- Dual Enrollment Fashion Design III (C11H22) -or- Dual Enrollment Fashion Design IV (C11H23)

Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.
- **Journalism** (G01H15) is a supplemental course that can be offered in addition to courses within the

Audio/Visual Production program of study but does not count toward concentrator status.

Business Management & Administration

Program of Study	Level 1	Level 2	Level 3	Level 4
Business Management	Introduction to Business & Marketing (C12H26)	Business Communications (C12H16) -or- Accounting I (C29H00) -or- Cambridge IGCSE Accounting (C29H08)	Business Management (C12H17) -or- Statewide Dual Credit Introduction to Business (C12H44) -or- Dual Enrollment Business Management I (C12H01) Dual Enrollment Business Management II (C12H47) -and/or- Principles of Management CLEP -and/or- Cambridge AS Business (C12H14)	Business & Entrepreneurship Practicum (C12H35) -and/or- Virtual Enterprise International ¹ (C12H23) -or- Dual Enrollment Business Management III (C12H51) Dual Enrollment Business Management IV (C12H52) -and/or- Principles of Management CLEP
Health Services Administration	Introduction to Business & Marketing (C12H26) -or- Health Science Education (C14H14)	Health Information Technology (C12H34)	Business Management (C12H17) -or- Statewide Dual Credit Introduction to Business (C12H44) -or- Dual Enrollment Health Services Administration I (C12H03) -or- Dual Enrollment Health Services Administration II (C12H49) -or- Cambridge AS Business (C12H14)	Health Services Administration Practicum (C12H38) -or- Dual Enrollment Health Services Administration III (C12H53) -or- Dual Enrollment Health Services Administration IV (C12H54)

Human Resources Management	Introduction to Business & Marketing (C12H26)	Business Communications (C12H16)	Human Resources Management (C12H36) -or- Dual Enrollment Human Resources Management I (C12H39) -or- Dual Enrollment Human Resources Management II (C12H50)	Human Resources Management Practicum (C12H37) -or- Dual Enrollment Human Resources Management III (C12H55) -or- Dual Enrollment Human Resources Management IV (C12H56)
Office Management	Computer Applications (C12X00)	Business Communications (C12H16)	Business Management (C12H17) -or- Statewide Dual Credit Introduction to Business (C12H44) -or- Dual Enrollment Office Management I (C12H02) -or- Dual Enrollment Office Management II (C12H48) -and/or- Principles of Management CLEP -or- Cambridge AS Business (C12H14)	Advanced Computer Applications (C12H25) -or- Dual Enrollment Office Management III (C12H57) -or- Dual Enrollment Office Management IV (C12H58) -and/or- Information Systems CLEP

¹ Satisfies ½ credit of Economics required for graduation.

Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.
- **American Business Legal Systems** (C12H20) and **Business Economics** (C12H21) are supplemental courses that can be offered in addition to courses within the Business Management and Human Resources Management programs of study but do not count toward concentrator status.

Education & Training

Program of Study	Level 1	Level 2	Level 3	Level 4
Early Childhood Education Careers	Early Childhood Education Careers I (C32H06)	Early Childhood Education Careers II (C32H07)	Early Childhood Education Careers III (C32H08) -or- Dual Enrollment Early Childhood Education Careers I (C32H10) -or- Dual Enrollment Early Childhood Education Careers II (C32H18)	Early Childhood Education Careers IV (C32H09) -or- Dual Enrollment Early Childhood Education Careers III (C32H22) -or- Dual Enrollment Early Childhood Education Careers IV (C32H23)
Educational Therapy and Support	Educational Therapy and Support I (C32H12)	Educational Therapy and Support II (C32H13)	Educational Therapy and Support III (C32H14) -or- Dual Enrollment Educational Therapy and Support I (C32H16) -or- Dual Enrollment Educational Therapy and Support II (C32H19)	Educational Therapy and Support Practicum (C32H15) -or- Dual Enrollment Educational Therapy and Support III (C32H24) -or- Dual Enrollment Educational Therapy and Support IV (C32H25)
Teaching as a Profession (K-12)	Fundamentals of Education (C32H00)	Teaching as a Profession I (C32H01)	Teaching as a Profession II (C32H02) -or- Dual Enrollment Teaching as a Profession (K-12) I (C32H04) -or- Dual Enrollment Teaching as a Profession (K-12) II (C32H05)	Teaching as a Profession Practicum (C32H03) -or- Dual Enrollment Teaching as a Profession (K-12) III (C32H26) -or- Dual Enrollment Teaching as a Profession (K-12) IV (C32H27)

Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.
- **Lifespan Development** (C19H17) is a supplemental course that can be offered in addition to courses within the Early Childhood Education Careers program of study but does not count toward concentrator status.

Finance

Program of Study	Level 1	Level 2	Level 3	Level 4
Accounting	Introduction to Business & Marketing (C12H26)	Accounting I (C29H00) -or- Cambridge IGCSE Accounting (C29H08)	Accounting II (C29H01) -or- Dual Enrollment Accounting I (C29H05) -and/or- Dual Enrollment Accounting II (C29H07) -or- Cambridge AS Accounting (C29H06)	Financial Planning (C29H02) -or- Statistics (G02H37) -or- AP Statistics (G02H26) -and/or- Dual Enrollment Accounting III (C29H12) -and/or- Dual Enrollment Accounting IV (C29H13) -and/or- Financial Accounting CLEP
Banking and Finance	Introduction to Business & Marketing (C12H26)	Accounting I (C29H00) -or- Cambridge IGCSE Accounting (C29H08)	Banking and Finance (C29H03) -or- Dual Enrollment Banking & Finance I (C29H09) -or- Dual Enrollment Banking & Finance II (C29H10)	Financial Planning (C29H02) -or- Dual Enrollment Banking & Finance III (C29H14) -or- Dual Enrollment Banking & Finance IV (C29H15)

Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.
- **Personal Finance** (C29H11) is a course required for graduation but does not count toward concentrator status in a program of study.

Government & Public Administration

Program of Study	Level 1	Level 2	Level 3	Level 4
Leadership in Government	JROTC I ^{1&2} (G08H04)	JROTC II ¹ (G08H05)	U.S. Government and Civics (G04H12) -or- JROTC III ¹ (G08H06) -or- Dual Enrollment Leadership in Community Emergency Response I (C15H22) -or- Dual Enrollment Leadership in Community Emergency Response II (C15H23)	Success Skills in Service Learning (C25H15) -or- JROTC IV (G08H07) -or- Dual Enrollment Leadership in Community Emergency Response III (C15H25) -or- Dual Enrollment Leadership in Community Emergency Response IV (C15H26)
Public Management and Administration	Principles of Public Service (C15H14)	Public Management and Administration (C15H16)	Public Law and Budgeting (C15H15) -or- Dual Enrollment Public Management & Administration I (C15H06) -or- Dual Enrollment Public Management & Administration II (C15H24)	AP US Government & Politics (G04H26) -or- Success Skills Through Service Learning (C25H15) -or- Dual Enrollment Public Management & Administration III (C15H27) -or- Dual Enrollment Public Management & Administration IV (C15H28)

¹JROTC I, II, and III satisfies the graduation requirement for Physical Education, Personal Finance and U.S. Government & Civics for students who complete all three courses.

²JROTC I and II satisfies credit the graduation requirement for Wellness for students who complete both courses.

Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.

Health Science

Program of Study	Level 1	Level 2	Level 3	Level 4
Diagnostic Services	Health Science Education (C14H14)	Anatomy and Physiology ¹ (G03H31 or C14H09) -or- Diagnostic Medicine (C14H12) -or- Dual Enrollment Anatomy and Physiology ¹ (G03H43)	Diagnostic Medicine (C14H12) -or- Anatomy and Physiology ¹ (G03H31 or C14H09) -or- Dual Enrollment Diagnostic Services I (C14H02) -or- Dual Enrollment Diagnostic Services II (C14H26) -or- Dual Enrollment Anatomy and Physiology ¹ (G03H43)	Cardiovascular Services (C14H18) -and/or- Clinical Internship (C14H11) -or- Dual Enrollment Diagnostic Services III (C14H37) -or- Dual Enrollment Diagnostic Services IV (C14H38)
Emergency Services	Health Science Education (C14H14)	Anatomy and Physiology ¹ (G03H31 or C14H09) -or- Medical Therapeutics (C14H15) -or- Dual Enrollment Anatomy and Physiology ¹ (G03H43)	Medical Therapeutics (C14H15) -or- Anatomy and Physiology ¹ (G03H31 or C14H09) -or- Dual Enrollment Emergency Services I (C14H04) -or- Dual Enrollment Emergency Services II (C14H29) -or- Dual Enrollment Anatomy and Physiology ¹ (G03H43)	Emergency Medical Services ¹ (C14H13) -or- Emergency Medical Services Practicum (C14H24) -or- Dual Enrollment Emergency Services III (C14H35) -or- Dual Enrollment Emergency Services IIV (C14H36)

<p>Nursing Services</p>	<p>Health Science Education (C14H14)</p>	<p>Anatomy and Physiology¹ (G03H31 or C14H09) -or- Medical Therapeutics (C14H15) -or- Dual Enrollment Anatomy and Physiology¹ (G03H43)</p>	<p>Medical Therapeutics (C14H15) -or- Anatomy and Physiology¹ (G03H31 or C14H09) -or- Dual Enrollment Nursing Services I (C14H03) -or- Dual Enrollment Nursing Services II (C14H27) -or- Dual Enrollment Anatomy and Physiology¹ (G03H43)</p>	<p>Nursing Education (C14H16) -and/or- Clinical Internship (C14H11) -or- Dual Enrollment Nursing Services III (C14H33) -or- Dual Enrollment Nursing Services IV (C14H34)</p>
<p>Sport and Human Performance</p>	<p>Health Science Education (C14H14)</p>	<p>Anatomy and Physiology¹ (G03H31 or C14H09) -or- Rehabilitation Careers (C14H08) -or- Dual Enrollment Anatomy and Physiology¹ (G03H43)</p>	<p>Anatomy and Physiology¹ (G03H31 or C14H09) if the student did not take it as Level 2, he/she must take it as a Level 3 course. For students who took Level 2 A&P, choices include: Rehabilitation Careers (C14H08) -or- Medical Therapeutics (C14H15) -or- Dual Enrollment Sport and Human Performance I (C14H39) -or- Dual Enrollment Sport and Human Performance II (C14H40) -or- Dual Enrollment Anatomy and Physiology¹ (G03H43) -or- IB Sports, Exercise, & Health Science I (SL) (G03H39)</p>	<p>Exercise Science (C14H22) -or- Clinical Internship (C14H11) -or- Dual Enrollment Sport and Human Performance III (C14H41) -or- Dual Enrollment Sport and Human Performance IV (C14H42) -or- IB Sports, Exercise, & Health Science I (SL) (G03H40)</p>

Therapeutic Services	Health Science Education (C14H14)	Anatomy and Physiology ¹ (G03H31 or C14H09) -or- One option from Level 3 -or- Dual Enrollment Anatomy and Physiology ¹ (G03H43)	Anatomy and Physiology ¹ (G03H31 or C14H09) if the student did not take it as Level 2, he/she must take it as a Level 3 course. For students who took Level 2 A&P, choices include: Dental Science (C14H21) -or- Pharmacological Science (C14H20) -or- Nutrition Science and Diet Therapy ¹ (C19H16) -or- Medical Therapeutics (C14H15) -or- Medical Assisting (C14H10) -or- Public Health and Epidemiology (C14H17) Dual Enrollment Therapeutic Services I (C14H05) -or- Dual Enrollment Therapeutic Services II (C14H28) -or- Dual Enrollment Anatomy and Physiology ¹ (G03H43)	Clinical Internship (C14H11) -or- Dual Enrollment Therapeutic Services III (C14H43) -or- Dual Enrollment Therapeutic Services IV (C14H44) -or- Dual Enrollment Medical Assisting (C14H32)
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¹ Satisfies one lab science credit for graduation.

Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.
- **Medical Terminology** (C14H07) is a supplemental course that can be offered in addition to courses within the Health Science career cluster but does not count toward concentrator status.
- **Dual Enrollment Medical Terminology** (C14H31) is a supplemental dual enrollment course that can be offered in addition to courses within the Health Science career cluster but does not count toward concentrator status.

Hospitality & Tourism

Program of Study	Level 1	Level 2	Level 3	Level 4
Culinary Arts	Culinary Arts I (C16H06)	Culinary Arts II (C16H07)	Culinary Arts III (C16H08) -or- Dual Enrollment Culinary Arts I (C16H01) -or- Dual Enrollment Culinary Arts II (C16H14)	Culinary Arts IV (C16H09) -or- Dual Enrollment Culinary Arts III (C16H20) -or- Dual Enrollment Culinary Arts IV (C16H11)
Hospitality and Tourism Management	Hospitality & Tourism Management I (C16H17) -or- Cambridge IGCSE <u>Travel & Tourism</u> (C16H03)	Hospitality & Tourism Management II (C16H18) -or- Cambridge International AS Level <u>Travel & Tourism</u> (C16H04)	Hospitality & Tourism Management III (C16H19) -or- Dual Enrollment Hospitality & Tourism Management I (C16H02) -or- Dual Enrollment Hospitality & Tourism Management II (C16H15)	Event Planning & Management (C16H12) -or- Dual Enrollment Hospitality & Tourism Management III (C16H10) -or- Dual Enrollment Hospitality & Tourism Management IV (C16H13)

Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.

Human Services

Program of Study	Level 1	Level 2	Level 3	Level 4
Cosmetology	Cosmetology I (C19H12)	Cosmetology II (C19H14)	Cosmetology III (C19H13) -or- Dual Enrollment Cosmetology I (C19H04) -or- Dual Enrollment Cosmetology II (C19H23)	Cosmetology IV (C19H21) -or- Dual Enrollment Cosmetology III (C19H27) -or- Dual Enrollment Cosmetology IV (C19H28)
Barbering	Barbering I (C19H09)	Barbering II (C19H10)	Barbering III (C19H11) -or- Dual Enrollment Barbering I (C19H05) -or- Dual Enrollment Barbering II (C19H24)	Entrepreneurship ¹ (C31H05) -or- Dual Enrollment Barbering III (C19H29) -or- Dual Enrollment Barbering IV (C19H30)
Dietetics and Nutrition	Introduction to Human Studies (C19H19)	Nutrition Across the Lifespan (C19H15) -or- Cambridge IGCSE <u>Food & Nutrition</u> (C19H08)	Nutrition Science and Diet Therapy ² (C19H16) -or- Dual Enrollment Dietetics & Nutrition I (C19H03) -or- Dual Enrollment Dietetics & Nutrition II (C19H22)	Human Services Practicum (C19H20) -and/or- Psychology (G04H15) -and/or- Sociology (G04H14) -or- Dual Enrollment Dietetics & Nutrition III (C19H31) -or- Dual Enrollment Dietetics & Nutrition IV (C19H32)

Human and Social Sciences	Introduction to Human Studies (C19H19)	Lifespan Development (C19H17)	Family Studies (C19H18) -or- Dual Enrollment Human and Social Sciences I (C19H02) -or- Dual Enrollment Human and Social Sciences II (C19H26)-or- Cambridge IGCSE <u>Sociology</u> (G04H65) -or- Human Growth and Development CLEP	Human Services Practicum (C19H20) -and/or- Psychology (G04H15) -and/or- Sociology (G04H14) -or- Dual Enrollment Human and Social Sciences III (C19H33) -or- Dual Enrollment Human and Social Sciences IV (C19H34)
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¹ Satisfies ½ credit of Economics required for graduation.

² Satisfies one lab science credit for graduation

Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.

Information Technology

Program of Study	Level 1	Level 2	Level 3	Level 4
Coding	Computer Science Foundations (C10H11) -or- Cambridge IGCSE Computer Science (C10H07)	Coding I (C10H14) -or- AP Computer Science Principles (G02H44)	Coding II (C10H15) -or- Mobile App Development (C10H22) -or- AP Computer Science Principles (G02H44) -or- Dual Enrollment Coding I (C10H01) -or- Dual Enrollment Coding II (C10H28)	Coding Practicum (C10H08) -and/or- AP Computer Science A (G02H45) -and/or- AP Computer Science Principles (G02H44) -or- Dual Enrollment Coding III (C10H32) -or- Dual Enrollment Coding IV (C10H33) -or- Cambridge International AS Level Computer Science (C10H25)
Cybersecurity	Computer Science Foundations (C10H11)	Cybersecurity I (C10H19) -and/or- AP Computer Science Principles (G02H44)	Cybersecurity II (C10H20) -and/or- AP Computer Science Principles (G02H44) -or- Dual Enrollment Cybersecurity I (C10H24) -or- Dual Enrollment Cybersecurity II (C10H31)	Cybersecurity Practicum (C10H21) -and/or- AP Computer Science Principles (G02H44) -or- Dual Enrollment Cybersecurity III (C10H34) -or- Dual Enrollment Cybersecurity IV (C10H35)
Networking Systems	Computer Science Foundations (C10H11)	Computer Systems (C10H10)	Networking (C10H13) -or- Dual Enrollment Networking Systems I (C10H02) -or- Dual Enrollment Networking Systems II (C10H29)	Cabling and Internetworking (C10H09) -and/or- IT Clinical Internship (C10H12) -or- Dual Enrollment Networking Systems III (C10H36) -or- Dual Enrollment Networking Systems IV (C10H37)

Web Design	Computer Science Foundations (C10H11) -or- Cambridge IGCSE Information and Communication Technology (C10H26)	Web Design Foundations (C10H16) -and/or- AP Computer Science Principles (G02H44)	Web Site Development (C10H17) -and/or- AP Computer Science Principles (G02H44) -or- Dual Enrollment Web Design I (C10H03) -or- Dual Enrollment Web Design II (C10H30)	Web Design Practicum (C10H18) -and/or- AP Computer Science Principles (G02H44) -or- Dual Enrollment Web Design III (C10H38) -or- Dual Enrollment Web Design IV (C10H39)
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Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.
- **Introduction to Geographic Information Systems** (C18H39) is a supplemental course that can be offered in addition to courses within the Cybersecurity program of study but does not count toward concentrator status.

Law, Public Safety, Corrections, & Security

Program of Study	Level 1	Level 2	Level 3	Level 4
Criminal Justice and Correction Services	Criminal Justice I (C30H00)	Criminal Justice II (C30H01)	Criminal Justice III: Forensic Criminal Investigations (C30H02) -or- Statewide Dual Credit: Criminal Justice (C30H11) ¹ -or- Dual Enrollment Criminal Justice and Correction Services I (C30H12) -or- Dual Enrollment Criminal Justice and Correction Services II (C30H13) -or- Unmanned Aircraft Systems for Criminal Justice (C30H18)	Criminal Justice Practicum (C30H03) -or- Dual Enrollment Criminal Justice and Correction Services III (C30H20) -or- Dual Enrollment Criminal Justice and Correction Services IV (C30H21) -or- Unmanned Aircraft Systems for Criminal Justice (C30H18)
Fire Management Services	Principles of Fire and Emergency Services (C30H04)	Fire Prevention (C30H05)	Fire Science I (C30H06) -or- Dual Enrollment Fire Management Services I (C30H14) -or- Dual Enrollment Fire Management Services II (C30H15)	Fire Science II (C30H07) -or- Dual Enrollment Fire Management Services III (C30H22) -or- Dual Enrollment Fire Management Services IV (C30H23)
Pre-Law	Pre-Law I ² (C30H08)	Pre-Law II ² (C30H09)	Pre-Law III ² (C30H10) -or- Dual Enrollment Pre-Law I (C30H16) -or- Dual Enrollment Pre-Law II (C30H17)	Pre-Law Practicum (C30H19) -or- AP U.S. Government and Politics (G04H26) -or- Dual Enrollment Pre-Law III (C30H24) -or- Dual Enrollment Pre-Law IV (C30H25)

¹ Statewide Dual Credit Criminal Justice **requires** Criminal Justice I **and** Criminal Justice II as prerequisite courses. Students cannot take Statewide Dual Credit Criminal Justice without having already completed the first two courses in the program of study.

²Pre-Law I, II, and III satisfies credit the graduation requirement for U.S. Government and Civics for students who complete all three courses.

Available courses for elective credit in this cluster:

- ***Work-Based Learning: Career Practicum*** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.
- ***American Business Legal Systems*** (C12H20) is a supplemental course that can be offered in addition to courses within the Legal and Correction Services program of study but does not count toward concentrator status.

Marketing, Distribution & Logistics

Program of Study	Level 1	Level 2	Level 3	Level 4
Entrepreneurship	Introduction to Business & Marketing (C12H26)	Marketing and Management I: Principles ¹ (C31H00)	Entrepreneurship ¹ (C31H05) -or- Dual Enrollment Entrepreneurship I (C31H12) -or- Dual Enrollment Entrepreneurship II (C31H14) -or- Cambridge IGCSE Enterprise (C31H13)	Business & Entrepreneurship Practicum (C12H35) -or- Virtual Enterprise International ¹ (C12H23) -or- Dual Enrollment Entrepreneurship III (C31H17) -or- Dual Enrollment Entrepreneurship IV (C31H18)
Marketing Management	Introduction to Business & Marketing (C12H26)	Marketing and Management I: Principles ¹ (C31H00)	Marketing and Management II: Advanced Strategies (C31H01) -or- Social Media Marketing and Analytics (C31H02) -or- Dual Enrollment Marketing Management I (C31H10) -or- Dual Enrollment Marketing Management II (C31H11) -and/or- Principles of Marketing CLEP	Advertising and Public Relations (C31H03) -or- Retail Operations ¹ (C31H04) -or- Event Planning & Management (C16H12) -or- Dual Enrollment Marketing Management III (C31H19) -or- Dual Enrollment Marketing Management IV (C31H20) -and/or- Principles of Marketing CLEP

Supply Chain Management	Introduction to Business & Marketing (C12H26) -or- Marketing and Management I: Principles ¹ (C31H00)	Foundations of Supply Chain Management (C31H06)	Supply Chain Management I (C31H07) -or- Dual Enrollment Supply Chain Management I (C31H15) -or- Dual Enrollment Supply Chain Management II (C31H16)	Supply Chain Management II (C31H08) -or- Supply Chain Management Practicum (C31H09) -or- Dual Enrollment Supply Chain Management III (C31H21) -or- Dual Enrollment Supply Chain Management IV (C31H22)
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¹ Satisfies ½ credit of Economics required for graduation.

Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.
- **Business Communications** (C12H16) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.

STEM

Program of Study	Level 1	Level 2	Level 3	Level 4
Advanced STEM Applications	STEM I: Foundation (C21H15)	STEM II: Applications (C21H16) -or- AP Computer Science Principles (G02H44)	STEM III: STEM in Context (C21H17) -or- AP Computer Science Principles (G02H44) -or- Dual Enrollment Advanced STEM Applications I (C21H32) -or- Dual Enrollment Advanced STEM Applications II (C21H33)	STEM IV: STEM Practicum (C21H18) -and/or- AP Calculus AB (G02H24) -or- AP Calculus BC (G02H25) -or- AP Computer Science A (G02H45) -or- AP Biology (G03H10) -or- AP Chemistry (G03H16) -or- AP Physics (G03H27, G03H28, G03H24, or G03H29) -or- Dual Enrollment Advanced STEM Applications III (C21H35) -or- Dual Enrollment Advanced STEM Applications IV (C21H36) -or- IB Biology II SL/HL (G03H69) -or- IB Physics II (SL) (G03H82)

BioSTEM	BioSTEM I (C21H07)	BioSTEM II (C21H08)	BioSTEM III (C21H09) -or- Dual Enrollment BioSTEM I (C21H37) -or- Dual Enrollment BioSTEM II (C21H38)	BioSTEM Practicum (C21H10) -or- Dual Enrollment BioSTEM III (C21H39) -or- Dual Enrollment BioSTEM IV (C21H40)
Engineering	Principles of Engineering and Technology (C21H04)	Engineering Design I (C21H05) -or- AP Computer Science Principles (G02H44) -or- Cambridge IGCSE Design and Technology (C21H03)	Engineering Design II (C21H06) -or- AP Computer Science Principles (G02H44) -or- Dual Enrollment Engineering I (C21H00) -or- Dual Enrollment Engineering II (C21H11)	Engineering Practicum (C21H14) -and/or- AP Physics (G03H27, G03H28, G03H24, or G03H29) -or- AP Computer Science A (G02H45) -or- Dual Enrollment Engineering III (C21H41) -or- Dual Enrollment Engineering IV (C21H42) -or- Cambridge International AS <u>Design and Technology</u> (C10H05)
Technology	Principles of Engineering and Technology (C21H04)	Digital Electronics (C13H07) -or- AP Computer Science Principles (G02H44)	Robotics & Automated Systems (C13H15) -or- AP Computer Science Principles (G02H44) -or- Dual Enrollment Technology I (C21H01) -or- Dual Enrollment Technology II (C21H12)	Engineering Practicum (C21H14) -and/or- AP Physics (G03H27, G03H28, G03H24, or G03H29) -or- AP Computer Science A (G02H45) -or- Dual Enrollment Technology III (C21H43) -or- Dual Enrollment Technology IV (C21H44) -or- IB Physics II (SL) (G03H82)

Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.
- **Introduction to Geographic Information Systems** (C18H39) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.
- **Foundations of Technology (EBD)** (C21H27) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.
- **Technological Design (EBD)** (C21H28) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.
- **Advanced Design Applications (EBD)** (C21H29) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.
- **Advanced Technological Applications (EBD)** (C21H30) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.
- **Engineering Design (EBD)** (C21H31) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.
- **Introduction to Engineering (PLTW)** (C21H19) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.
- **Principles of Engineering (PLTW)** (C21H20) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.
- **Aerospace Engineering (PLTW)** (C21H21) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.
- **Civil Engineering & Architecture (PLTW)** (C21H22) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.
- **Biotechnical Engineering (PLTW)** (C21H23) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.
- **Digital Electronics (PLTW)** (C21H24) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.
- **Computer Integrated Manufacturing (PLTW)** (C21H25) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.
- **Engineering Design and Development (PLTW)** (C21H26) is a supplemental course that can be offered in addition to courses within these programs of study but does not count toward concentrator status.

Transportation

Program of Study	Level 1	Level 2	Level 3	Level 4
Automotive Maintenance and Light Repair	Maintenance and Light Repair I (C20H09)	Maintenance and Light Repair II (C20H10)	Maintenance and Light Repair III (C20H11) -or- Dual Enrollment Automotive Maintenance & Light Repair I (C20H01) -or- Dual Enrollment Automotive Maintenance & Light Repair II (C20H21)	Maintenance and Light Repair IV (C20H12) -or- Dual Enrollment Automotive Maintenance & Light Repair III (C20H22) -or- Dual Enrollment Automotive Maintenance & Light Repair IV (C20H30)
Automotive Collision Repair	Introduction to Collision Repair (C20H20)	Collision Repair: Non-Structural ¹ (C20H13) -or- Collision Repair: Painting & Refinishing ¹ (C20H14)	Collision Repair: Non-Structural ¹ (C20H13) -or- Collision Repair: Painting & Refinishing ¹ (C20H14) -or- Dual Enrollment Automotive & Collision Repair I (C20H02) -or- Dual Enrollment Automotive & Collision Repair II (C20H23)	Collision Repair: Non-Structural ¹ (C20H13) -or- Collision Repair: Painting & Refinishing ¹ (C20H14) -or- Collision Repair: Damage Analysis, Estimating, & Customer Service (C20H19) -or- Dual Enrollment Automotive & Collision Repair III (C20H24) -or- Dual Enrollment Automotive & Collision Repair IV (C20H31)
Aviation Flight	Introduction to Aerospace (C20H15)	Aviation I: Principles of Flight (C20H16)	Aviation II: Advanced Flight (C20H18) -or- Dual Enrollment Aviation Flight I (C20H03) -or- Dual Enrollment Aviation Flight II (C20H28)	Unmanned Aircraft Systems Pilot (C20H29) -or- Dual Enrollment Aviation Flight III (C20H32) -or- Dual Enrollment Aviation Flight IV (C20H33)

¹ May be taught for up to three credits. Implementation options vary; contact the career cluster consultant for more information.

Available courses for elective credit in this cluster:

- **Work-Based Learning: Career Practicum** (C25H16) may substitute for the Level 4 offering in all programs of study but does not count toward concentrator status.
- **Welding I** (C13H12) and **Welding II** (C13H10) are supplemental courses that can be offered in addition to courses within the Automotive Collision Repair program of study but do not count toward concentrator status.
- **Structural** may be taken at a participating postsecondary institution as a third- or fourth-level course within the Automotive Collision Repair program of study.
- Programs of study in the areas of *Aviation Maintenance* and *Diesel Technology* can be found at a Tennessee College of Applied Technology. Please look at the regional campus to determine course offerings. The following dual enrollment course codes apply **Dual Enrollment Aviation Maintenance** (C20H04) and **Dual Enrollment Diesel Technology** (C20H06).

Middle School

Career Cluster	6 th Grade	7 th Grade	8 th Grade
Advanced Manufacturing	STEM Explorers (C25600)	STEM Innovators (C25701)	STEM Designers (C25801) Career Exploration* (C25X00)
Agriculture, Food, & Natural Resources		Introduction to Agricultural Sciences (C18X00)	Introduction to Agricultural Sciences (C18X00) Career Exploration* (C25X00)
Architecture & Construction	STEM Explorers (C25600)	STEM Innovators (C25701)	STEM Designers (C25801) Career Exploration* (C25X00)
Arts, Audio/Visual Technology, & Communication	Keyboarding (G10600)	Keyboarding (G10700)	Computer Applications (C12X00) Keyboarding (G10800) Career Exploration* (C25X00)
Business Management & Administration	Keyboarding (G10600)	Keyboarding (G10700)	Computer Applications (C12X00) Keyboarding (G10800) Career Exploration* (C25X00)
Education & Training	Introduction to Social Health ² (C19X00)	Introduction to Social Health (C19X00)	Introduction to Social Health (C19X00) Career Exploration* (C25X00)
Finance	Keyboarding (G10600)	Keyboarding (G10700)	Computer Applications (C12X00) Keyboarding (G10800) Career Exploration* (C25X00)
Government & Public Administration			Career Exploration* (C25X00)
Health Science		Introduction to Health Science (C14X00)	Introduction to Health Science (C14X00) Career Exploration* (C25X00)
Hospitality & Tourism			Career Exploration* (C25X00)
Human Services	Introduction to Social Health ² (C19X00)	Introduction to Social Health (C19X00)	Introduction to Social Health (C19X00) Career Exploration* (C25X00)
Information Technology	Keyboarding (G10600) STEM Explorers (C25600) Computer Science (G25X40) Computer Science: Flexible Scheduling	Keyboarding (G10700) STEM Innovators (C25701) Computer Science (G25X40) Computer Science: Flexible Scheduling	Computer Applications (C12X00) Keyboarding (G10800) STEM Designers (C25801) Career Exploration* (C25X00)

	(G25X41) Computer Science Discoveries (C25X04)	(G25X41) Computer Science Discoveries (C25X04)	Computer Science (G25X40) Computer Science: Flexible Scheduling (G25X41) Computer Science Discoveries (C25X04)
Law, Public Safety, Corrections, & Security			Career Exploration* (C25X00)
Marketing, Distribution & Logistics	Keyboarding (G10600)	Keyboarding (G10700)	Computer Applications (C12X00) Keyboarding (G10800) Career Exploration* (C25X00)
STEM	STEM Explorers (C25600) Computer Science (G25X40) Computer Science: Flexible Scheduling (G25X41) Computer Science Discoveries (C25X04)	STEM Innovators (C25701) Computer Science (G25X40) Computer Science: Flexible Scheduling (G25X41) Computer Science Discoveries (C25X04)	STEM Designers (C25801) Career Exploration* (C25X00) Computer Science (G25X40) Computer Science: Flexible Scheduling (G25X41) Computer Science Discoveries (C25X04)
Transportation	STEM Explorers (C25600)	STEM Innovators (C25701)	STEM Designers (C25801) Career Exploration* (C25X00)

¹ *Keyboarding* may also be used with 4th and 5th-grade students (G10400, G10500). ² *Introduction to Social Health* may also be used with 5th-grade students (C19X00).

Note: Courses marked (EBD) are part of the *Engineering by Design* curriculum package and may require additional costs and training to implement. Courses marked (PLTW) are part of the *Project Lead the Way* curriculum package and may require additional costs and training to implement.